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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/643,877 | 08/20/2003 | Mu-Yi Liu | COR 131 | 5190 |

7590 10/01/2004
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| EXAMINER |
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PRENTY, MARK V

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| ART UNIT | PAPER NUMBER |
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2822

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,877

Applicant(s)

LIU ET AL.

Examiner

MARK V PRENTY

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2004 and 24 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 3 is/are allowed.
- 6) ☒ Claim(s) 4 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

This Office Action is in response to the amendment filed on August 11, 2004 and the supplemental amendment filed on September 24, 2004.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 1 together with Sardo et al. (newly cited United States Patent 5,032,881 – hereafter Sardo).

With respect to independent claim 4, Prior Art Fig. 1 illustrates an ONO flash memory array having first and second memory cells 102 and 104, comprising: a substrate 106 having first source/drain and second source/drain regions 120 and 122, the second source/drain region 122 having a first portion in the first memory cell 102 and a second portion in the second memory cell 104; a channel 130 in the first memory cell between the first source/drain region 120 and the first portion of the second source/drain region 122; and an ONO layer 108 above the channel for memory storage in the first memory cell.

The difference between claim 4 and Prior Art Fig. 1 is claim 4 further comprises “an implanted pocket arrangement nearby the second source/drain region that is asymmetrical with respect to the first and second portions thereof.”

Sardo teaches providing a memory array with an implanted pocket arrangement nearby a shared (between two memory cells) source/drain region that is asymmetrical with respect to the shared source/drain region in order to enable one cell to be programmed without disturbing the other and in order to make programming the cells more efficient (see the entire patent, including the Abstract, for example).

It would have been obvious to one skilled in this art to provide Prior Art Fig. 1's shared second source/drain region 122 with an implanted pocket arrangement that is asymmetrical with respect to the first and second portions thereof in order to enable one cell to be programmed without disturbing the other and in order to make programming the cells more efficient as taught by Sardo.

Claim 4 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Prior Art Fig. 1 together with Sardo.

Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable over the prior art of record if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1 and 3 are allowable over the prior art of record.

The prior art of record does not disclose or suggest the allowable ONO flash memory arrays taken as a whole, including the pockets having different concentrations.

The proposed drawing change filed on August 11, 2004 is approved. A replacement drawing sheet is required in response to this Office Action.

The applicant's arguments are moot in view of the new ground of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.


Mark V. Prenty
Primary Examiner